

IMPROVING MATHEMATICS LEARNING ACTIVITIES USING THINK-PAIR-SHARE COOPERATIVE LEARNING MODELS T FOR STUDENTS GRADE XI

Mifta Nur Khasanah^a, Nur Arina Hidayati^b

Program Studi Pendidikan Matematika Universitas Ahmad Dahlan
Jalan Ring Road Selatan, Tamanan, Banguntapan, Bantul Yogyakarta

^amifta.nurkhasanah@gmail.com, ^bnurarinahidayati@gmail.com

ABSTRACT

The learning process, which is monotonous and has no variation, will make students bored easily. Even learning that focuses on the teacher's effects, students tend to be passive and not accustomed to showing their opinions. Most of them are seen to be silent when the learning process is going on. In that case, it needs an effort to improve students' learning activity. This research is aimed to improve Mathematics learning activity with cooperative learning model type TPS (TPS) for students class XI Science 3 at State Senior High School (SMAN) 1 Dukun Magelang Regency in Academic Year 2017/ 2018. Data is gathered by using an observation sheet and interview. This research belongs to action research, which contains two cycles. The research subject is students of XI Science 3 SMAN 1 Dukun Magelang Regency in Academic Year 2017/ 2018. Whereas the object of the research is to improve students' Mathematics learning activity with cooperative learning model type, TPS for students class XI Science 3 at SMAN 1 Dukun Magelang Regency in Academic Year 2017/ 2018. In collecting the data, the writer uses an observation sheet and interview. The research results show that cooperative learning model type TPS can improve the Mathematics learning activity of XI Science 3 at SMAN 1 Dukun Magelang Regency in Academic Year 2017/ 2018. This case is proved from the result of the observation of Mathematics learning, which works out increasing on each cycle. On cycle, one average presentation of the result of students' observation of Mathematics learning activity is about 49,53%. On cycle II average presentation of the result of students' observation of Mathematics, learning activity is about 70,27%. From the interview result, it can be explained that common students are interested and feel pleased in learning Mathematics with cooperative learning model type TPS.

Keywords: Students' activity, Cooperative Learning Model, TPS

INTRODUCTION

Education is an essential factor in a person's life. With education, one can improve the quality of intelligence and can achieve what is desired. Education needs to get all parties' attention, both from the government, society, and family, as a form of shared responsibility in managing education. The education path can consist of formal, non-formal, and informal education. Formal education is structured and tiered education consisting of primary education, secondary education, and higher education. Formal education takes place in the classroom, which is common in schools. Education in schools is carried out with a learning process in the classroom. A teaching and learning process can be said to be successful one of them is if the student learning outcomes are good and exceed Minimum Completeness Criteria (MCC). However, the teaching and learning process does not always match what is expected due to several obstacles. Such as inadequate learning facilities, less active students, the teacher's teaching process not varied, and many other factors. Mathematics is an important subject because mathematics is often used in daily life and supports other subjects, for example, Physics, Chemistry, Economics, and Geography. Mathematics is still often considered difficult because of the many formulas used and mathematical objects that are abstract (cannot be observed with the five senses). Mathematics subjects will be easily understood by students when applied to the game and various variations. Monotonous learning models will make students passive and bored in learning.

Based on observations made on January 6, 2017, and an interview with one of the mathematics teachers at SMAN 1 Dukun, he said that students were still unable to be active when the learning process took place. Students cannot be invited to do the learning process independently, so learning is still centered on the teacher. When learning takes place, there are still some students who do not pay attention

to the teacher's explanation, students with the back seat often do not pay attention to the teacher, and only a few students who actively participate in the learning process. Also, if students do not understand what the teacher is teaching, they do not ask to repeat it so that it is explained again by the teacher. So that makes students unable to master the material well. Consequently, the learning outcomes of mathematics are low.

Based on the above problems, there needs to be a change in the learning process to improve student activity. One action that can be taken is to innovate the learning model. Researchers applied a learning model to overcome these problems if it had never been applied in SMAN 1 Dukun. After adjusting to students' situations, researchers chose to use the cooperative learning model TPS type. According to researchers, the learning model is suitable for the learning process and can increase student learning activities. TPS is a type of cooperative learning that is designed to influence student interaction patterns. The application of the TPS learning model is expected to be able to awaken the active role of students during the learning process. By applying this learning model, students will be formed in pairs and share information. This study aims to improve mathematics learning activities using cooperative learning models TPS type in class XI IPA 3 in Odd Semester SMAN 1 Dukun Magelang Regency in Academic Year 2017/2018.

METHODS

This research is a type of classroom action research. Wina Sanjaya, in his book *Classroom Action Research* (2009: 26), states that: CAR can be interpreted as a process of studying learning problems in the classroom through self-reflection to solve these problems by carrying out various planned actions in real situations and analyzing each effect of the treatment. According to Arikunto (2013: 137), The CAR model referred to illustrates the existence of four steps (and repetition). This research was carried out using the stages of planning, action, observation, and reflection. This research was carried out in SMA 1 Dukun Magelang Regency in Odd Semester 2017/2018 Academic Year.

This study's subjects were all class XI IPA 3 Odd Semester SMA 1 Dukun Magelang Regency in the Academic Year 2017/2018. At the same time, this research's object is an increase in students' mathematics learning activities by applying the TPS (TPS) type of cooperative learning model to class XI IPA 3 students of SMAN 1 Dukun Magelang Regency in the Academic Year 2017/2018.

The procedures in this study include:

- a. Planning. In the action planning stage in cycle I, the activities carried out are:
 - 1) Develop a Learning Implementation Plan (RPP) with a cooperative learning model TPS (TPS) type.
 - 2) Prepare teaching aids.
 - 3) Arrange and prepare observation sheets.
- b. Implementation. The researcher will carry out the learning process using a TPS type of cooperative learning model by the lesson plan (RPP) that has been made. Before the learning process occurs, researchers will disseminate to students about the TPS type of cooperative learning model and deliver some supporting material.
- c. Observation. The researcher will observe and record all events during the learning process using a student observation sheet.
- d. Reflection. The researcher and the teacher discuss the observations obtained at the observation time to see an increase in the classroom's student learning activities. Then there is an evaluation of the learning activities that have been carried out. If the results obtained do not indicate an increase in the student learning activity and the observation results are not perfect, it will be planned to improve the first cycle with the second cycle's holding. Weaknesses and deficiencies in the first cycle will be corrected in the next cycle, namely in the second cycle.

The technical data collection in this research is to use:

1. Observation method. Observation is a technique of collecting data by observing every event taking place and recording it with an observation tool about things that will be observed or examined (Sanjaya: 2009).
2. Interview method. Interviews or interviews can be interpreted as a technique of collecting data using spoken language, either face-to-face or through certain media channels (Sanjaya, 2009: 96).
3. Documentation. Documentation is done to strengthen the data obtained from observations.
4. Triangulation. Triangulation is defined as a data collection technique that combines various data collection techniques and existing data sources (Sugiyono, 2010: 330).

While the data collection instruments in this study used observation sheets and interview guidelines, the data analysis technique in this research uses data presentation and data conclusion.

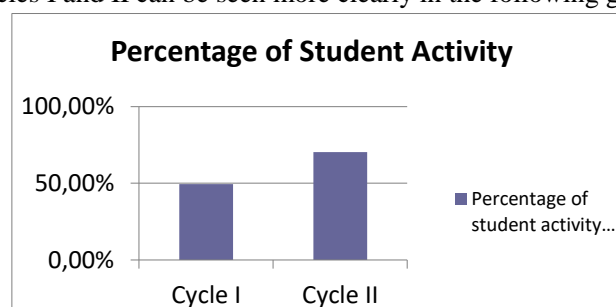
RESULTS AND DISCUSSION

The results of classroom action research conducted by researchers consisting of the cycle I and cycle II regarding mathematics learning using TPS type cooperative learning models indicate an increase in student learning activities in mathematics learning. This can be seen from the analysis of the results of observations of student activities in learning mathematics in the stages of the cycle I and cycle II, which have increased. In the first cycle phase, the mathematics learning process was carried out using the TPS type of cooperative learning model. The student activities in mathematics learning were also lacking. However, after an improvement in cycle I, student activity in cycle II has increased. This can be seen from the percentage of each indicator/aspect of student activity shown in Table 1:

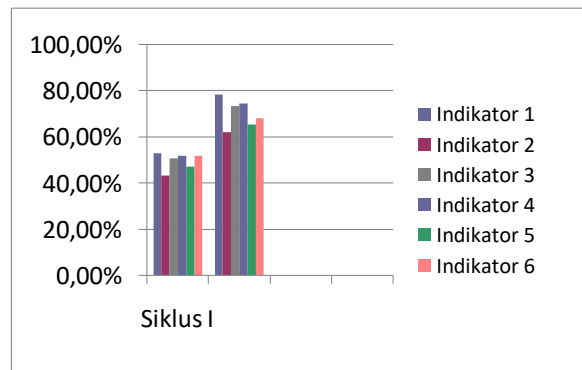
Table 1: Observation Results of Student Activities in Mathematics Learning Cycle I and Cycle II

No	Indicator	Percentage (%)	
		Cycle I	Cycle II
1.	Enthusiastic students participate in learning	52,27%	78,41%
2.	Student interaction with the teacher	43,18%	61,93%
3.	Interaction between students	50,57%	73,30%
4.	Group collaboration	51,70%	74,43%
5.	Student activities in groups	47,73%	65,34%
6.	Student participation in concluding the results of the discussion	51,70%	68,18%
Mean		49,53%	70,27%

Increased activity in cycles I and II can be seen more clearly in the following graph:



Graph 1. Average Percentage of Student Activity Observation Results



Graph 2. Observation Results of Student Activities for Every Aspect in Cycle I and Cycle II

From the tables and graphs, it can be seen that in the first cycle and second cycle increased, where in the first cycle, enthusiastic students participated in learning by 52.27%, the interaction between students and teachers by 43.18%, Interaction between students by 50.57%, group collaboration at 51.70%, student activity in groups at 47.73%, student participation in concluding the discussion results at 51.70%. Besides that, the average percentage of the results of observations of student activities in the first cycle was 49.53%. This means that the percentage of students' observation scores in learning mathematics at this stage is still included in the sufficient criteria by the qualification results. Whereas in the second cycle, after improving what was still lacking in the first cycle phase, student activities using the Cooperative learning model TPS type increased. This can be seen from the increase in the percentage results of each indicator/aspect in the second cycle phase, namely students' enthusiasm in participating in learning by 78.41%, the interaction between students and teachers by 61.93%, the interaction between students by 73.30%, group collaboration amounted to 74.43%, student activities in groups of 65.34%, student participation in concluding the results of the discussion amounted to 68.18%. The average percentage obtained from the observation of student activities in the second cycle stage is 70.27%. This means that the qualification results of the percentage score of student observation activities in learning mathematics in the second cycle are included in both categories.

In each aspect studied, experienced a different level of improvement. In the first aspect, the students' enthusiasm in participating in learning experienced the highest increase than the others, because when viewed from observations during the study, at the beginning of the meeting, many activities that took place outside the classroom so that students in the classroom lacked concentration with learning take place. Many students still see activities that occur outside the classroom. However, starting to enter the second cycle, many students have begun to ignore what happens outside the classroom because there is often a warning from the researcher and student awareness to understand the material being discussed so that students' enthusiasm in participating in the learning process has increased. Simultaneously, the lowest aspect of the increase in student participation in concluding the discussion results is that there are still many students who are not confident and afraid of being wrong when concluding the discussion results. So, in this aspect, the lowest increase in other aspects.

Because there has been an increase in the percentage of students' observations in each cycle wherein the second cycle, the percentage has reached more than this study was stopped in cycle II. Research related to TPS learning models have been conducted. The results of Widya's study (2012) show that using TPS learning models can improve students' learning activities in class XI IPS 1 of SMAN 2 Wonosari in the academic year 2011/2012. In addition, students also respond positively to the implosion of TPS learning models. Ni'mah research results (2014) show that Thinks to Pair Share learning models with the experimental method can improve students' learning outcomes and activities of class VIII MTs. Nahdlatul Muslimin. Learning activities that can be developed with the TPS learning model and the experimental method are conducting experiments, asking questions, listening to presentations, and expressing opinions, and doing tests.

CONCLUSION

Overall, it can be concluded that mathematics learning through the TPS type of cooperative learning model can be used to increase student activity in mathematics learning in students of class XI IPA 3 odd semester of SMAN 1 Dukun Magelang Regency in the academic year 2017/2018. Mathematics learning using TPS type cooperative learning models received positive responses from students, which means students felt interested and happy with their learning. Student activities in mathematics learning could be increased using TPS type cooperative learning models. This is evident from the results of interviews with several students who said that the learning applied was very enjoyable and easy to follow.

REFERENCES

- Arikunto, Suharsimi. 2013. *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.
- Ni'mah, G. & Dwijananti, P. 2014. Penerapan Model Pembelajaran TPS (TPS) dengan Metode Eksperimen Untuk Meningkatkan Hasil Belajar dan Aktivitas Belajar Siswa Kelas VIII MTs. Nahdlatul Muslimin Kudus. *Unnes Physic Education Journal*, 3(2):21-24.
- Sanjaya, Wina. 2009. *Penelitian Tindakan Kelas*. Bandung: Kencana.
- Sugiyono. 2012. *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.
- Widya, Kusuma, F. & Nur, Aisyah, M. 2012. Implementasi Model Pembelajaran Kooperatif Tipe Think Piar Share Untuk Meningkatkan Aktivitas Belajar Akutansi Siswa Kelas XI IPS 1 SMAN 2 Wonosari Tahun Ajaran 2011/2012. *Jurnal Pendidikan Akutansi Indonesia*, 10(2):56-61.